



6CG8-A

TRIODE-PENTODE CONVERTER

9-PIN MINIATURE TYPE

Intended for use in equipment having
series heater-string arrangement

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GENERAL DATA

Electrical:

Heater, for Unipotential Cathode:

Voltage	6.3	ac or dc volts
Current	0.45	amp
Warm-up time (Average).	11	sec

For definition of heater warm-up time and method of determining it, see sheet HEATER WARM-UP TIME MEASUREMENT at front of this Section.

Direct Interelectrode Capacitances:

	Without External Shield	With External Shield ⁰	
Triode Unit:			
Grid to plate	1.5	1.5	μμf
Grid to cathode & pentode grid No.3, and heater.	2.6	3	μμf
Plate to cathode & pentode grid No.3, and heater.	0.05	1	μμf
Pentode Unit:			
Grid No.1 to plate.	0.03 max.	0.016 max.	μμf
Grid No.1 to cathode & grid No.3, grid No.2, and heater.	4.8	5	μμf
Plate to cathode & grid No.3, grid No.2, and heater.	0.9	1.6	μμf
Pentode grid No.1 to triode plate.	0.05 max.	0.04 max.	μμf
Pentode plate to triode plate.	0.05 max.	0.007 max.	μμf
Heater to cathode	5.5	5.5 [•]	μμf

Characteristics:

	Triode Unit	Pentode Unit	
Plate-Supply Voltage.	100	250	volts
Grid-No.2 Supply Voltage. . .	—	150	volts
Cathode Resistor.	100	200	ohms
Amplification Factor.	40	—	
Plate Resistance (Approx.). .	6900	750000	ohms
Transconductance.	5800	4600	μmhos
Plate Current	8.5	7.7	ma
Grid-No.2 Current	—	1.6	ma
Grid-No.1 Voltage (Approx.) for plate current of 10 μamp.	-10	-10	volts

⁰ With external shield JETEC No.315 connected to cathode except as noted.

[•] With external shield JETEC No.315 connected to ground.

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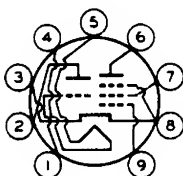
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Mechanical:

Mounting Position Any
 Maximum Overall Length 2-3/16"
 Maximum Seated Length 1-15/16"
 Length, Base Seat to Bulb Top (Excluding tip). 1-9/16" \pm 3/32"
 Maximum Diameter 7/8"
 Dimensional Outline See General Section
 Bulb T6-1/2
 Base Small-Button Noval 9-Pin (JETEC No. E9-1)
 Basing Designation for BOTTOM VIEW 9GF

Pin 1 - Triode Grid
 Pin 2 - Triode Plate
 Pin 3 - Cathode
 Pin 4 - Heater
 Pin 5 - Heater
 Pin 6 - Pentode Plate



Pin 7 - Pentode
 Grid No. 2
 Pin 8 - Pentode
 Grid No. 3,
 Cathode
 Pin 9 - Pentode
 Grid No. 1

CONVERTER SERVICE

Maximum Ratings, Design-Center Values:

	Triode Unit as Osc.	Pentode Unit as Mixer	
PLATE VOLTAGE	250 max.	250 max.	volts
GRID-No. 2 (SCREEN-GRID) SUPPLY VOLTAGE	-	250 max.	volts
GRID-No. 2 VOLTAGE	-	See Grid-No. 2 Input	
Rating Chart at front of Receiving Tube Section			
GRID-No. 1 (CONTROL-GRID) VOLTAGE:			
Negative bias value	40 max.	40 max.	volts
Positive bias value	0 max.	0 max.	volts
PLATE DISSIPATION	1.5 max.	2 max.	watts
GRID-No. 2 INPUT:			
For grid-No. 2 voltages up to 125 volts	-	0.5 max.	watt
For grid-No. 2 voltages between 125 and 250 volts	-	See Grid-No. 2 Input	
Rating Chart at front of Receiving Tube Section			
GRID-No. 1 INPUT	0.5 max.	-	watt
PEAK HEATER-CATHODE VOLTAGE:			
Heater negative with respect to cathode	200 max.	200 max.	volts
Heater positive with respect to cathode	200 [▲] max.	200 [▲] max.	volts

[▲] The dc component must not exceed 100 volts.



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Typical Operation:

	<i>Triode Unit as 250-Mc Osc. •</i>	<i>Pentode Unit as Mixer*</i>	
Plate Voltage	150	150	volts
Grid-No.2 Voltage	-	150	volts
Mixer Grid-No.1			
Supply Voltage.	-	-3.5	volts
Oscillator Voltage (rms) at mixer grid No.1. . . .	-	2.6	volts
Mixer Grid-No.1-Circuit Resistance.	-	120000	ohms
Oscillator Grid Resistor.	2700	-	ohms
Conversion Trans- conductance	-	2100	μ hos
Plate Current	13	6.2	ma
Grid-No.2 Current	-	1.8	ma
Grid Current.	3.6	-	ma
Grid-No.1 Current	-	2	μ amp
Oscillator Power Output (Approx.). . . .	0.5	-	watt

Maximum Circuit Values:

Grid-No.1-Circuit Resistance:

For fixed-bias operation.	0.1 max.	megohm
For cathode-bias operation.	0.5 max.	megohm

- In TV or FM receivers, it is generally desirable to operate the oscillator with less power input than shown in the tabulated data in order to avoid over-excitation and excessive oscillator radiation.

* With separate excitation and triode unit connected to ground.

Curves shown under Type 6X8 also apply to the 6CG8-A